
INTERNATIONAL BULLETIN

OF PLANT PROTECTION

DISCOVERIES AND CURRENT EVENTS *

Eritrea : Desert Locust (*Schistocerca gregaria*) during March and April 1929 (1).

During March 1929 hatching of locusts was reported at Mersa Taclai on the shore of the Red Sea, and in the neighbourhood of Massowa. Active control measures having been undertaken their complete destruction is thought to have been effected.

Towards the middle of March a number of swarms which had previously been reported in Abyssinia invaded Acchelé Guzai. Some of them after crossing Dembesan and the Mensa territory flew in the direction of the Sahel, the others went towards the eastern plain by way of the valleys of the Comaile and the Alighedé.

The information received seems to show that the locusts originated from the Avargallé region and the Dancalie plain.

The movements of the swarms were followed ; the locusts were all of a reddish colour. Numerous dead specimens were noted.

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In April 1929 numerous winged locusts from other territories, and in particular from that of the Adi Abò, entered the Colony.

The swarms reported flew mainly in the direction of the Tucul, Adi-Quala and Liban regions. Presumably the localities chosen for breeding will again be the land along the Mareb and the neighbouring districts. It is already known that eggs have been laid in the Maragus, Mai Tzada and Merettà Sebené districts. In the eastern plain small isolated swarms of hoppers have been promptly destroyed.

Guadeloupe : Outbreak of Gummosis of the Sugar Cane (2).

An outbreak of gummosis has just been reported in the sugar cane plantations in Guadeloupe.

* In this, as in the next chapter, the countries are arranged in French alphabetical order.

(1) Communication from the official correspondent to the Institute, Dr. A. DE BENEDICTIS, Head of the Bureau of Agriculture of Eritrea at Asmara.

(2) Communication from the official correspondent to the Institute, Mr. A. BUFFON, Chief of the Agricultural Service of Guadeloupe and its Dependences at Basse-Terre.

The disease was discovered in March, 1929 by Mr. ASHBY, late pathologist at the Imperial College of Agriculture in Trinidad, while visiting with the Director of the Agricultural Research Station the plantations under the charge of the latter.

The varieties most particularly attacked are "Big Tana", "Rubanée" and "Ba II. 669"; but up to the present the damage is of little importance.

Hungary : Important or New Plant Diseases Observed during 1926-1928 (1).

"Take-all" of cereals, produced mainly by *Ophiobolus graminis* Sacc. and *O. herpotrichus* Sacc., in spite of a systematic rotation of crops in 1927 and 1928, has caused more loss than in 1926. According to recent observations the wet weather and late spring frosts have partly accounted for the spread of the disease during recent years.

Vigorous control measures have been undertaken with Bordeaux mixture against the "Leaf spot" of sugar beet (*Cercospora beticola* Sacc.) which has become a serious disease throughout the country. The weather conditions of the last two years together with the introduction of more extensive control by spraying has slightly decreased the extent of the disease.

An interesting case of soil infection by *Rhizoctonia violacea* Tul. has been observed. Sugar beet grown after lucern which had been destroyed by *Rhizoctonia* was also seriously infected.

It is noteworthy that up to the present Hungary has been free from "Wart disease" of the potato (*Synchytrium endobioticum* [Schilb.] Perc.) On the other hand extensive damage has been caused by *Phytophthora infestans* De By., which caused losses which were estimated at 4.5 million quintals during 1926.

In experiments on the control of clover dodder (*Cuscuta Epithymum* L.) "Cuscutan", which is based on carbolineum, has given good results; it kills both the dodder and the aerial parts of the host plant without damaging the under ground parts.

Among diseases of fruit trees, *Sclerotinia fructigena* (Pers.) Schroet. and *Scl. cinerea* (Bon.) Schroet. and the hitherto doubtful species *Scl. laxa* (E.) Aderh. and Ruhl. have caused the most serious losses.

Several diseases which have been little known until now have become more widely spread during recent years. For example, *Marssonina Panationiana* Berl. has destroyed the leaves and flower stems of lettuce (*Lactuca sativa* L.) and on one large estate has completely prevented its cultivation.

A bacterial disease, resembling the American "Wildfire", has for the first time acquired an epidemic character in the chief tobacco growing districts and has caused serious alarm.

In addition several diseases which were previously unknown in Hungary have been reported. *Bacillus cerealis* Gentner has completely destroyed the wheat on some land which has been flooded. An outbreak of *Pleosphaerulina Briosiana* Poll. and *Gloeosporium Morianum* Sacc. has occurred on lucern. In 1926 hop mildew (*Pseudoperonospora Humuli* [Miyabe and Takah.] Wils.) was reported for the first time and it has now spread over practically the whole country. Control

(1) Communication from the official correspondent to the Institute, M. Hermann KERN, Direktor des landwirtschaftlichen Versuchswesens und Direktor des kgl. ung. pflanzenphysiologischen und pathologischen Institutes at Budapest.

experiments by means of Bordeaux mixture have proved effective. *Bacillus Sorghi* Burr. has produced a new disease of millet (*Sorghum vulgare* Pers.), and *Bac. Phaseoli* E. F. Smith has caused a new disease of beans. Also an entirely new disease of apple trees in Hungary has been caused by a species of *Alternaria*.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Germany. — In virtue of the Ordinance of 28 March 1929, which came into force on 15 April following, the importation of rooted plants and slips of carnations is prohibited till further orders, with a view to preventing the introduction of the "Nelkenwickler" [*Tortrix pronubana* Hb.]; transit is permitted only by direct route and under customs supervision. (*Reichsgesetzblatt*, Berlin, 5. April 1929, Teil I, Nr. 15, S. 83).

Germany (Anhalt). — By a Police Order of 31 October, 1928, concerning the control of crop and forest pests, fruit trees must be cleared of caterpillars each year before 15 April. When there is an excessive increase of caterpillars harmful to forest trees or coppice, specially of the Pine Moth [*Dendrolimus pini*], or an exceptional abundance of grubs and beetles of Cock Chafers [*Melolontha*], of Hamsters [*Cricetus*] or of Field-Voles [*Arvicola*], or an attack of the Colorado Potato Beetle [*Leptinotarsa decemlineata*] or other pests or diseases of fruit trees or of field or market-garden crops which endanger the crops of the whole district, the police are authorised to order control measures to be taken.

Fruit trees and plants attacked by pests or diseases may not be put on the market.

One part of the Order is concerned with the control of the *Scolytidae*. It provides that the bark of Conifers which have been felled during the winter and left in the wood shall be removed before 15 May.

Paragraphs 6 and 7 of the Order are concerned with the destruction of harmful plants.

Barberry bushes [*Berberis vulgaris*] may not be allowed within 200 metres of fields. Plants and roots shall be eliminated within this space.

The clover dodder [*Cuscuta Epithymum* var. *Trifolii*] and certain weeds shall be destroyed before they shall be able to flower or ripen seed. Similarly, by police order, every species of thistle shall be prevented from flowering as far as is possible without damage to crops. (*Amtsblatt für Anhalt*, Dessau, 13. November 1928, 165. Jahrg., Nr. 91, S. 343-344).

Austria (Republic of). — The first part of Ordinance No. 362 ("Giftverordnung", ordinance concerning poisons) of 20 December 1928 consists of a list and classification of poisons. Paragraph 3 of this part enumerates those which are employed in industry, scientific work, agriculture, forestry and for domestic purposes and require special precautions on account of the risk involved in their care and marketing. The second part, the 3rd point of which is concerned *inter alia* with the poisons used in agriculture and forestry, deals with the restrictions prescribed for the trade in and the precautions for the sale of, such poisons. The

third part is concerned with the handling of poisons and toxic substances. The fourth part contains special regulations with regard to certain less dangerous methods of controlling plant diseases and pests.

To facilitate the use of such methods the following regulations were provided :— a private person who buys such poisons as are specified in paragraph 3 of part I, does not require a " permit for purchase of poisons " if he buys them from an Association or firm which has a Ministerial permit for sale. This permit covers only :—

(1) Paris Green or Schweinfurth Green (copper aceto-arsenite) ; (2) arsenic powders ; (3) substances containing dibasic lead arsenate, provided that the lead and arsenic content are indicated on the package ; (4) phosphorated seed ; (5) cereal seed containing strychnine.

The substances specified in Nos. (2) and (3) must, even if they are themselves green, be mixed with a green colouring matter which is readily soluble in water ; phosphorated seed must be dyed in some particular colour, white excepted. Poisoned cereal seed must be coloured a bright red. Producers are obliged to employ these colourings.

The sale facilitated in this manner on the delivery of a poison receipt may be allowed :—

(a) to farmers, silviculturists, horticulturists, fruit producers and vine growers, provided that they shall use the toxic substances in a useful and legal manner and exclusively for the control of harmful animals and plants ;

(b) on condition that the quantity shall not exceed that corresponding to the actual annual requirement of the buyer, which shall be precisely indicated ;

(c) under the charge of the director of the organisation responsible and authorised for the sale, or, if an Agricultural Association is concerned, under the charge of a person specially authorised for the purpose who shall report the sale to the administrative body of the place in question ;

(d) to persons over 16 years of age.

Records should be kept of the delivery of the substances used in the control of harmful animals and plants, and the receipt of sale and the postal and railway receipts should be preserved for three years.

There should be issued to each buyer, in addition to printed directions for use, a copy of the regulations to be observed in using substances for plant protection which are contained in the present Ordinance.

The following products may be delivered without commercial restrictions :—

(1) " Sokial " pastes and poisoned wheat ; (2) the liquid disinfectants " Germisan ", " Kalimat B ", " Salvocer ", " Urania-Saatbeize ", " Uspulun-Universal " (" Tillantin ") and " Weizen-Fusariol " ; (3) the powder disinfectants " Abavit B ", " Fusariol-Trockenbeize ", " Paragel ", " Porzol " (" Porzol H "), " Salvocer-Paste ", " Salvocer-Staubbeize " and " Tillantin ".

A striking colouring matter must be added to disinfectants containing thallium salts, barium carbonate or fluosilicic acid.

Toxic disinfectants for seed or soil should be mixed with green or blue colouring matter which is readily soluble, and should have a disagreeable odour and flavour. They should be contained in their original packing, which should be of sound material, and should bear a label explaining the risks and methods of use.

The fifth part of the Ordinance contains primarily provisions concerning the inspection of the trade in poisons and penalties for infringement.

An Annexe to the Ordinance contains directions about plant protection including the following regulations :—

Toxic substances which may be used for plant protection should be sold only

for this purpose and to persons expert in their use, who may not hand them over to other persons. The poisons should be stored with the necessary precautions, under lock and key, in water-tight receptacles bearing the word "Poison". Such substances if they contain lead compounds, except with special permission from the authorities, may be used as powder or in spraying mixtures only in the following cases:—(a) on plants of any species of which the aerial parts will not be gathered or used during the year in which the treatment has taken place; the treatment may be applied at any time of year except during the flowering period; (b) on plants used exclusively for green manuring, during any time but the flowering period; (c) on vines before flowering and after harvesting, but only in the open air; (d) on fruit trees, seed trees and nut trees before flowering, and on fruit trees also during the first three weeks after flowering, with due care not to apply them during flowering; (e) on ornamental plants excepting those which flourish in the open all the year round.

The treatment of plants with sprays or toxic powders not containing lead is permitted, excepting with special authorisation, only on the following crops and under the following conditions:—(a) on plants of which the aerial parts will not be harvested or used during the year of treatment, excepting those specified under (n); the treatment may be applied at any time of year except during flowering; the same is applicable to plants used as green manure; (b) on plants of any species, even those which normally may not receive toxic treatment, with or without restrictions, when they are to be used exclusively for the production of seed, up to within 5 weeks of harvesting, but not during flowering; (c) on vines, but only those which grow in the open, after the end of the vintage until 10 August of the following year and for early vines until at latest five weeks before the beginning of the vintage; (d) on fruit trees except during flowering, harvesting and the five preceding weeks; (e) on fruit bushes bearing berries except during flowering, harvesting and the five preceding weeks; (f) on ornamental plants and trees bordering roads which are not fruit trees except during flowering, and on basket willow, at any time; (g) on potatoes and horse-radish during the whole year, flowering excepted; (h) on beet, chicory, hemp, flax, turnip, rape, poppy, mustard, pumpkins, cucumbers, onions, peas, lentils, beans, Swedish turnip and kohlrabi up to within five weeks of the beginning of harvesting, except during flowering; (i) on other varieties of *Brassica* until they are beginning to form "hearts"; (k) on hop until flowering and after picking; (l) on cereals including maize, until flowering, if they are not for use as green fodder; (m) on medicinal plants, but only if their leaves and stems are not used medicinally; (n) on forest cultivations only with the permission and according to the instructions of the local Inspector of Waters and Forests.

In all other cases and for all other cultivated plants the application of sprays and toxic powders is prohibited.

With regard to associated crops the treatment of the main crop depends on the rules applicable to the associated crop.

Products destined for human consumption may not be gathered during the five weeks after treatment with a toxic substance. This prohibition extends also to fallen fruit which should not be used for cider or jam manufacture.

Plants treated with toxic substances may be used for making sweet or fermented ensilage only after the passage of 8 weeks between the time of treatment and of harvesting, or, in cases where the disinfectant contains lead, only if an official chemical analysis proves there is no risk attached.

Grazing of crops treated with toxic substances is prohibited during eight weeks after treatment or, if the substances contain lead, during a whole year.

Trees or bushes growing in freely accessible places which have been treated with arsenical mixtures or powders should be indicated by warning notices. (*Bundesgesetzblatt für die Republik Österreich*, Wien, 31. Dezember 1928, Jahrg. 1928, 99. Stück, S. 2323-2343).

Belgium (1). — By reason of the discovery of new centres of Potato Wart Disease (*Synchytrium endobioticum*) by Decree of 30 November, 1928 the Minister of Agriculture has modified the provisions for the interior sanitary measures with regard to this disease as follows :—

Any producer or holder of potatoes who ascertains the presence of wart disease among his crops or stores shall immediately report the matter to the Burgomaster of the Commune. The latter will inform the Minister of Agriculture by telegraph.

Potato tubers grown in a district which the Phytopathological Service Inspector declares to be infected with wart disease must not be removed from the district if uncooked. Potatoes grown within a radius of 500 metres of the area declared infected must not be lifted or transported without authorisation by the Inspector.

Storage and cultivation of potatoes within the infected zone are forbidden. Similarly, storage and cultivation of potatoes within a 500 metre radius of the zone declared infected with wart disease are forbidden. The Phytopathological Service Inspector may in certain cases extend the prohibition to include other crops where their storage or cultivation is liable to cause the spread of wart disease.

The Phytopathological Service Inspector may allow derogations from the preceding regulations, in particular for purposes of research or for cultivation of varieties known to be immune to wart disease.

Infringements of this Decree will be punishable under the provisions of Art. 21 of the Royal Decree of 2 September, 1922.

In cases, where the application of these regulations shall have caused serious loss to farmers the Minister of Agriculture may grant compensation.

Brazil (2). — By a "resolução" of 26 May, 1928, the Ministry of Agriculture, Industry and Commerce has made the following regulations :—

(1) The importation is prohibited of :—

(a) coffee and coffee plants and seeds and plants of other species of Rubiaceae from any country ;

(b) potato tubers from any country, unless they are accompanied by a certificate of origin and health ; the certificate of origin must state that the place of origin is free from the diseases produced by *Synchytrium endobioticum* (" cancro da batata ", " galha negra da batata "), *Spongospora subterranea* and from *Phthorimaea operculella* ;

from Portugal and Spain importation is prohibited until further notice ;

(c) cotton seed and unginned cotton from any country ;

(d) raw cotton and cotton waste from any country unless accompanied by an official declaration that they have been disinfected ;

(e) cuttings and plants of sugar cane from any country unless accompanied by a certificate of health stating that the district of provenance is free from the

(1) Communication from the official correspondent to the Institute, Mr. Em. MARCHAL, Director of the State Phytopathological Station at Gembloux.

(2) Communication from the official correspondent to the Institute, Dr. Carlos MOREIRA, Director of the Instituto Biologico de Defesa Agricola at Rio de Janeiro.

“ galha das folhas ” or “ doença de Fidji ” produced by *Phytamoeba Sacchari* (*Northiella Sacchari*);

(f) plants of every species and variety of *Citrus* from Asia, Oceania, the Union of South Africa and the United States of America, unless accompanied by a sanitary certificate declaring that the district of provenance is free from *Bacterium* (*Pseudomonas*) *Citri* (“ cancro citrico ”) and *Dialeurodes citri* (“ mosca branca ”);

(g) banana plants from any country;

(h) plants, fruits and seeds of cacao from any country, particularly from Ecuador and the Guianas;

(i) seed of lucerne and other leguminous fodder plants from any country unless accompanied by a sanitary certificate particularly declaring them to be free from *Cuscuta*;

(j) grain of maize from any country unless accompanied by a sanitary certificate declaring that the district of provenance is free from *Pyrausta nubilalis*;

(k) fresh fruit and chestnuts from any country unless accompanied by a sanitary certificate;

exception being made for coffee, potatoes, *Citrus* plants, lucerne and other leguminous fodder plants, the other plants or plant parts specified above may be imported by the Ministry of Agriculture, Industry and Commerce for experimental cultivation in official institutes with the precautions prescribed by the “ Instituto Biologico de Defesa Agricola ”;

(2) the importation is permitted of:—

(a) garlic, onions, cloves, almonds, walnuts, hazel nuts, aniseed, cumin, pepper, “ alpiste ” [*Phalaris*] and “ painço ” [*Panicum*];

(b) wheat, oats, rye and barley if intended exclusively for food or industrial use;

(c) flax seed when intended exclusively for industrial purposes;

the Ministry of Agriculture, Industry and Commerce reserves the right of applying the provisions of the plant protection regulations to the products referred to in (a) and (b), when it appears that the importation of such products may for any reason constitute a danger to agriculture in the Republic;

(3) the importation of living plants or living parts of plants is permitted only by the ports of Manáos, Belém, Recife, S. Salvador, Rio de Janeiro, Santos, S. Francisco do Sul, Rio Grande, Porto Alegre and Corumbá;

(4) small quantities of living plants or parts of living plants imported by post or forming part of passenger luggage coming from abroad are not required to show a sanitary certificate; persons concerned may not withdraw their goods from the customs office until authorisation is given by the Plant Sanitary Inspection Service officer after suitable examination; living plants and parts of living plants whose importation is absolutely prohibited or is subject to special conditions are excluded from this provision;

(5) the free transit between the States of fruit-bearing plants is forbidden only in the ports having a Plant Sanitary Inspection Service; for the transit of such plants within the Republic this Service will issue a special permit authorising their transport by rail or sea;

(6) the free transit between the States of plants and other living parts of sugar cane is forbidden unless accompanied by a special permit of transit issued after inspection of the plantation of origin on the request of the person concerned;

(7) the “ Serviço de Inspeção e Fomento Agrícolas ”, the Forestry Ser-

vice of Brazil, the National Museum and the other scientific departments under the Ministry of Agriculture, Industry and Commerce are authorised to despatch within the Republic plants of their own cultivation without a permit of transit;

(8) the State of Rio Grande do Sul is declared infested with *Aspidiotus perniciosus* and consequently the transport from the State to any other part of Brazil, by sea or land, of plants and living parts of plants, including fruit, which are not accompanied by a permit of transit certifying their healthy condition, is prohibited;

(9) the State of Rio Grande do Sul is also declared infested with *Peritymbia vastatrix* and the same prohibitory regulations referred to in the preceding case are in force for vines and parts of vines;

(10) the islands of Marinheiros and Leonideo, also in the State of Rio Grande do Sul, are declared infested with *Margarodes brasiliensis* and consequently the dispatch from the islands of plants and parts of vines, of plants of Gramineae and of *Oxalis articulata* is prohibited;

(11) the States of Parahyba do Norte and Pernambuco are declared infested with *Cerococcus parahybensis* ("vermelho") and *Rhizococcus coffeae* ("piollo branco" or "lendea"); the transport from these States into any other part of Brazil is prohibited, by sea or land, not only of plants and the remaining living parts of coffee but of all other plants which may be a source of infection by these scale insects;

(12) the drafts of the sanitary certificate are approved.

* * By "resolução" of 2 June 1928 the Minister of Agriculture, Industry and Commerce has prohibited the importation throughout the territory of the Republic of seeds and plants of eucalyptus produced in New Zealand, Australia, South Africa and the Argentine Republic.

Cuba. — In virtue of the "resolución" of 21 January 1929 — creating an exception to the Presidential Decree No. 1551 of 17 September 1928 (see this *Bulletin*, 1929, No. 3, p. 36-37) — the importation is allowed, only by the port of Havana, of lily bulbs coming from Bermuda, by means of special permits, granted by the "Sección de Sanidad Vegetal" after application made by the importers. The bulbs must be sent entirely without soil, sand, straw, or leaves of plants, and accompanied, in addition to the consular invoice, by a certificate of the official Phytopathological Service of Bermuda, certified by the Cuban consular representative, showing that the bulbs are free from any dangerous plant pests or diseases; on arrival the bulbs will be inspected by the said "Sección de Sanidad Vegetal". (*Revista de Agricultura, Comercio y Trabajo*, Publicación mensual, órgano oficial de la Secretaría de Agricultura, Comercio y Trabajo, Habana, Cuba, febrero de 1929, año XI, vol. 10, núm. 8, pag. 46).

Italy. — By Ministerial Decree of 25 April 1929, there has been established for sale to the public a type of secondary product of tobacco, designated "Sol-fato di nicotina" (nicotine sulphate), at two concentrations, viz., 50 and 25 %. (*Gazzetta ufficiale del Regno d'Italia*, Roma, 16 maggio 1929, anno 70^o, n. 114, p. 2187).

Peru. — The Presidential Decree of 10 August, 1928 has declared infested with mosaic disease the sugar cane plantations in the valleys of Rímac and Carabayllo. In consequence, in virtue of art. 3 of the Law 1221 it is prohibited to

take cuttings of cane from those plantations and to transport them into other valleys in the territory of the Republic. (*La Vida Agrícola*, Lima-Peru, 1928, vol. V, n^o. 57, pág. 747).

Tripolitania. — By the Ministerial Decree of 19 February, 1929 tents imported into Tripolitania and intended for covering citrus trees during the fumigation process are exempt from the customs duty on imports up to 31 December following. (*La Tripolitania Agrícola*, Tripoli, 1929, anno IV, n. 2, p. 41).

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[This atlas is designed to be of assistance in the testing of potato varieties immune from wart disease (*Synchytrium endobioticum*) in respect of their identity and purity.

In the coloured plates the characters of the growing plants (flowers and leaves) and the tubers (including the sprouts) of the most widely-grown immune varieties are presented. The characters most important for identification and differentiation are described also in the text.

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[Contains:

Part I. — General problems: Host resistance. — Climatic resistance. — Tropic behaviour. — Disease. — Parasites and predators. — Theory of insecticides. — Stomach poisons. — Contact insecticides. — Fumigants and combination insecticides. — Cultural influence.

Part II. — Area problems: South-Eastern Asia. — Mediterranean Area. — West Africa and Central America. — North-Western Europe. — Euro-Asiatic Plains. — North America. — South America, South Africa, Central and East Africa. — Hawaii and Australasia. — Locality disinfection. — Locality protection.

Part III. — Bibliography. — Index of authors. — Subject index].

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